

WHAT IS CLAIMED IS:

1. An apparatus for encoding a moving picture comprising:

frame rate controlling means for controlling the frame rate of an input moving picture datastream, composed of a plurality of chronologically arrayed frames;

frame rate calculating means for calculating a setting value of the frame rate of said moving picture datastream; and

encoding means for encoding said moving picture datastream, output from said frame rate controlling means, for compression, and for outputting an encoded datastream, generated on said encoding for compression;

said encoding means controlling the bitrate of said encoded datastream in dependence on a target bitrate as set from outside;

said frame rate calculating means calculating a setting value of the frame rate based on the picture quality of said encoded datastream output from said encoding means;

said frame rate controlling means controlling the frame rate of said moving picture datastream to a setting value calculated by said frame rate calculating means.

2. The apparatus for encoding a moving picture according to claim 1 wherein said frame rate calculating means changes the setting value of the frame rate to a value lower than the current value when the degree of deterioration of the picture quality of the datastream encoded by said encoding means is not less than a preset value.

3. The apparatus for encoding a moving picture according to claim 1 wherein said

frame rate calculating means changes the setting value of the frame rate to a value higher than the current value when the degree of deterioration of the picture quality of the datastream encoded by said encoding means is not larger than a preset value.

4. The apparatus for encoding a moving picture according to claim 1 wherein said frame rate calculating means changes the setting value of the frame rate to a value lower than the current value when the degree of deterioration of the picture quality of the datastream encoded by said encoding means is not less than a first threshold value and wherein said frame rate calculating means changes the setting value of the frame rate to a value higher than the current value when the degree of deterioration of the picture quality of the datastream encoded by said encoding means is not larger than a second threshold value lower than said first threshold value.

5. The apparatus for encoding a moving picture according to claim 1 wherein said encoding means encodes said moving picture datastream for compression by quantizing data based on a quantization scale value, and wherein said frame rate calculating means verifies the picture quality of the encoded datastream output from said encoding means based on said quantization scale value.

6. The apparatus for encoding a moving picture according to claim 1 further comprising:

S/N (signal/noise) ratio calculating means for calculating an S/N ratio of the encoded datastream based on a pixel value of the moving picture datastream prior to encoding and on a pixel value of the moving picture datastream following the decoding

of said encoded datastream;

said frame rate calculating means verifying the picture quality of the encoded datastream, output by said encoding means, based on said S/N ratio.

7. An apparatus for encoding a moving picture in which an encoded datastream is generated by encoding a moving picture datastream, formed by pixel data in a spatial domain, for compression, said apparatus comprising:

orthogonal transform means for orthogonal transforming pixel data of said moving picture datastream, in terms of a preset pixel block as a unit, to generate a moving picture datastream, composed of pixel data in the frequency domain;

quantization means for quantizing the moving picture stream, composed of pixel data of the frequency domain output from said orthogonal transform means, based on the quantization scale set from one said preset pixel block to another;

encoding means for converting the moving picture datastream, quantized by said quantization means, into an encoded datastream which is in keeping with a preset encoding system, to output the resulting encoded datastream;

inverse quantization means for inverse quantizing the moving picture datastream, quantized by said quantization means, based on the quantization scale used at the time of quantization;

inverse orthogonal transform means for inverse orthogonal transforming the moving picture datastream, inverse quantized by said inverse quantization means, in terms of a preset pixel block as a unit, to generate a moving picture datastream formed

by pixel data in the spatial domain; and

S/N (signal/noise) ratio calculating means for finding the S/N ratio based on pixel data of the original moving picture datastream supplied to said orthogonal transform means and pixel data of the encoded moving picture datastream output from said inverse orthogonal transform means.

8. A method for encoding a moving picture in which an input moving picture datastream, composed of a plurality of chronologically arrayed frames, is encoded for compression to generate an encoded datastream, said method comprising:

encoding said datastream for compression, as the bitrate of the encoded datastream to be output is controlled in keeping with a setting value of the target bitrate; and

detecting the picture quality of the generated encoded datastream and calculating a setting value of the frame rate based on the detected picture quality, by way of controlling the frame rate of said moving picture datastream.

9. An apparatus for transmitting a moving picture comprising:

frame rate controlling means for controlling the frame rate of an input moving picture datastream composed of a plurality of chronologically arrayed frames;

frame rate calculating means for calculating a setting value of the frame rate of said moving picture datastream;

encoding means for encoding said moving picture datastream, output from said frame rate controlling means, for compression, and for outputting an encoded

datastream, generated on said encoding for compression; and

transmitting/ receiving means for transmitting the datastream, encoded by said encoding means, to a receiving apparatus over a network, and transmitting/ receiving control data with said receiving apparatus;

said transmitting/ receiving means detecting the state of the network based on control data received by said receiving apparatus and calculating a target bitrate based on the detected network status;

said encoding means controlling the bitrate of said encoded datastream responsive to the target bitrate calculated by said transmitting/ receiving means;

said frame rate calculating means calculating the setting value of the frame rate based on the picture quality of the encoded datastream output from said encoding means;

said frame rate controlling means controlling the frame rate of said moving picture datastream to the setting value calculated by said frame rate calculating means.